IN THE CLAIMS:

Please amend claims 1, 6, 14, 22, 23, 28-29 and 30 as follows:

sub. B1

1. (Amended) A system for enhancing object state awareness to track a plurality of approaching airborne objects, comprising:

a receiver subsystem to receive reference signals from an uncontrolled transmitter and scattered transmissions originating from the uncontrolled transmitter and scattered by an object of said plurality of approaching airborne objects;

A1

a front-end processing subsystem to determine a radial velocity of the object based on the received transmissions and to buffer digitized transmission replicas of the received transmissions; and

a back-end processing subsystem to received the digitized transmission replicas of the received transmissions to determine object state estimates based on the determined radial velocity.

sub. B1

6. (Amended) A passive coherent location system for monitoring a predetermined location within airspace, comprising:

a receiver subsystem to receive scattered transmissions scattered by an object within said airspace and to output digitized signals of said scattered transmissions, said scattered transmissions originating from an uncontrolled transmitter;

A2

a front-end processing subsystem to determine a frequency-difference-of-arrival for said digitized signals and to buffer digitized transmission replicas of said digitized signals; and

a back-end processing subsystem to received the digitized transmission replicas and to determine positional information for said object in accordance with said frequency-difference-of-arrival.

sub. B1

14. (Amended) A method for determining an updated state estimate for an object, comprising:

receiving a reference transmission from an uncontrolled transmitter and a scattered transmission that originated from said uncontrolled transmitter and that was scattered by the object;

comparing the received transmissions to determine a measurement differential;

A3

updating a previous state estimate based on the determined measurement differential;

buffering digitized transmission replicas of said received transmissions, wherein said digitized replicas are received by a back-end processing subsystem; and

issuing a warning when said object is within a predetermined distance from a ground location.

sub. B1

22. (Amended) A method for determining an updated state estimate for an object, comprising:

receiving a reference transmission from an uncontrolled transmitter and a scattered transmission that originated from said uncontrolled transmitter and was scattered by the object;

comparing the received transmissions to determine a measurement differential;

A4 cont.

updating a previous state estimate based on the measurement differential;

buffering digitized transmission replicas of said received transmissions, wherein said digitized replicas are received by a back-end processing subsystem; and

issuing a warning when said object undertakes an airpath, wherein said airpath intersects with another object.

23. (Amended) A method for tracking an object using a civil aviation passive coherent location system, comprising:

selecting a transmitter transmitting a reference transmission;

receiving said reference transmission;

receiving a scattered transmission scattered by an object within an airspace, wherein said scattered transmission is transmitted from said transmitter;

comparing said scattered transmission to said reference transmission to determine measurement differentials;

buffering digitized transmission replicas of said scattered transmissions and said reference transmissions; and

updating an object state estimate according to said measurement differentials.

28. (Amended) A system for determining an updated state estimate for an object, comprising:

means for receiving a reference transmission from an uncontrolled transmitter and a scattered transmission that originated from said uncontrolled transmitter and was scattered by the object;

means for comparing the received transmission to determine a measurement differential;

means for updating a previous state estimate based on the determined measurement differential;

means for buffering digitized transmission replicas of said received transmissions, wherein said digitized replicas are received by a back-end processing subsystem; and

means for issuing a warning when said object is within a predetermined distance.

29. (Amended) A system for determining an updated state estimate for an object, comprising:

means for receiving a reference transmission from an uncontrolled transmitter and a scattered transmission that originated from said uncontrolled transmitter and was scattered by the object;

means for comparing the received transmission to determine a measurement differential;

means for updating a previous state estimate based on the measurement differential;

means for buffering digitized transmission replicas of said received transmissions, wherein said digitized replicas are received by a back-end processing subsystem; and

means for issuing a warning when said object undertakes an airpath, wherein said airpath intersects with another object.

30. (Amended) A system for tracking an object using a civil aviation passive coherent location system, comprising:

means for selecting a transmitter transmitting a reference transmission;

means for receiving said reference transmission;

means for receiving a scattered transmission scattered by an object within an airspace, wherein said scattered transmission is transmitted from said transmitter;

means for comparing said scattered transmission to said reference transmission to determine measurement differentials;

means for buffering digitized transmission replicas of said scattered transmissions and said reference transmissions, wherein said buffered digitized transmission replicas can be transmitted for analysis upon request by a user; and

means for updating object state estimate according to said measurement differentials.